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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

VOL. XI.—No. 267.

FRIDAY, MAY 18, 1888.

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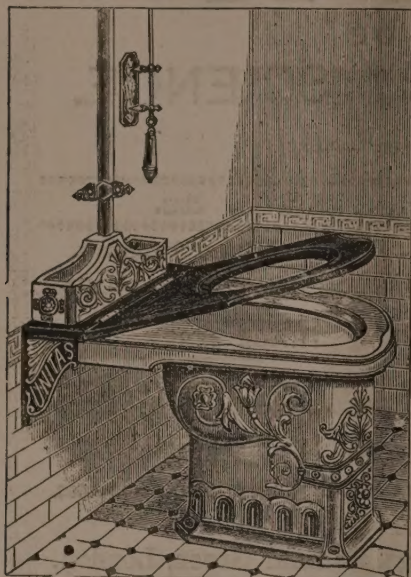
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EDITED BY

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LONDON: FRIDAY, MAY 18, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—Herder.

SPEAKING of tobacco-giddiness or vertigo, I observe that in sixty-three cases of excessive use of tobacco, Decaisne found forty-nine to be over fifty years of age. More than half the cases presented, besides digestive derangements, alternating constipation and diarrhoea, an exaggeration of urinary secretion, and more or less sleeplessness and palpitation. In thirty-seven cases, continues the account, the smokers pursued the habit fasting, and in these vertigo was present, especially in the morning. The appearance of the giddiness coincides in one-third of the cases with the suppression of the profuse sweats and marked diminution of the urinary secretion. Sometimes the symptoms have been confounded with those due to brain congestion, and even to heart disease. Besides the absolute suppression of the use of tobacco, laxatives, warm baths, magnesia, and bitters were used in treating the cases.

It may not be generally known that when exposed to severe cold, a feeling of warmth is readily created by repeatedly filling the lungs to their utmost extent in the

following manner: Throw the shoulders well back, and hold the head well up. Inflate the lungs slowly, the air entering entirely through the nose. When the lungs are completely filled, hold the breath for ten seconds or longer, and then expire it quickly through the mouth. After repeating this exercise while one is chilly, a feeling of warmth will be felt over the entire body, and even to the feet and hands. It is important to repeat this process many times each day, and especially when in the open air. If the habit ever becomes universal, then consumption and many other diseases will rarely, if ever, be heard of.

DR. W. T. BLACK has recently been expounding his views of the relations which he regards as existing between tea-drinking and the health of the teeth. He says: "Some years since, when on duty at recruiting stations in the North of England, I took observation on the great amount of disease and loss of the teeth existing amongst the class of men offering themselves. It became a cause of rejection of itself in great numbers. As far as my enquiries went, I was led to trace it to the excessive tea-drinking indulged in by the working classes in the manufacturing towns, and this went on all through the day, whether with food or not. In fact, instead of five o'clock tea being the invention of the upper classes, it was found to exist to an injurious extent in the working classes long before that time."

GIVING reasons for his opinions, Dr. Black says that tea seems to have a peculiar tendency to cause inflammation in the tooth-sacs, leading to inflammation and, eventually, abscess of the fang, with, of course, toothache at every stage. Whether this special tendency was due to theine or tannin having an elective affinity for dentine it is not possible for me to say. It would be curious to know if medical men, practising in such manufacturing districts, had observed the deterioration of teeth to be coincident with tea-drinking.

DR. DUNGATE's remarks in HEALTH, No. 266, regarding the influence of maternal impressions on the unborn child are aptly illustrated by the observations of Dr. Welch, of Brighton. This gentleman, writing to a medical journal, says that a child born of a woman under his care showed a cyclopean or "single-eyed" deformity. He states that "The mother, at an early period of her pregnancy, was struck between the eyes with a small eel, just caught by her boy in the Lea, which accidentally

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slipped from a piece of thread while the boy was slinging it round to show her, and to this she attributed the malformation. The specimen is now in the museum at Lincoln's Inn." In another case a woman gave birth to a two-headed child having three legs. "This case was reported by the late Dr. Phillips in Guy's Reports. The mother attributed the abnormal birth to an impression made upon her some seven months previously when seeing the Siamese twins." In a third case, a child minus the left forearm was born. "It appears that the mother had during her early pregnancy been an in-patient at a hospital, and had seen a recently-amputated forearm dressed daily in the bed adjoining hers." It would seem as though the scientific opinion which pooh-poohed the idea of maternal impressions affecting the offspring would have to be revised in view of these and allied instances.

♦ ♦ ♦

AN investigation into the outbreak of typhoid fever, held at the Michigan State Prison, at Jackson, by Prof. V. C. Vaughan, has resulted in obtaining facts which tend strongly to prove that the outbreak was due to defective sewerage. The view that sewers and house-draining were efficient agents in the propagation of typhoid fever is, of course, held by all sanitarians. In the investigation which Professor Vaughan made, the water-supply and milk-supply were first ruled out as possible vehicles by negative evidence. It was then thought that the defective condition of the sewers, combined with the insufficient supply of fresh air, was the most probable cause of the epidemic. The cases, nearly all, were from a distinct portion of the prison, and investigation proved that the soil-pipe running from the hospital, and the house-drain, into which it entered, were defective, and were pouring sewer-air into that portion of the prison.

♦ ♦ ♦

PROFESSOR VAUGHAN took to his laboratory a sample of the air from within the soil-pipe, and has found within it the specific germ of typhoid fever. Such facts as these are of the greatest practical importance, and should be made a matter of record whenever they are observed, and should be widely disseminated. They show the absolute necessity for thorough disinfection of the excreta of typhoid fever patients, and the dangers which may, and probably will, result from a neglect of this important measure. Had the discharges from a single typhoid fever patient been efficiently disinfected, the devastating Plymouth epidemic, which resulted in the illness of 1,153 persons, and the death of 114, would never have occurred.

♦ ♦ ♦

PROFESSOR BROWN-SÉQUARD, as was recently noted in HEALTH, has been making experiments to determine whether the human breath was capable of producing any poisonous effects. From the condensed watery vapour of the expired air, he obtained a poisonous liquid which, when injected under the skin of rabbits, produced almost immediate death. He ascertained that this poison was an alkaloid, and not a microbe or "germ." The rabbits thus injected died without convulsions, the heart and large blood-vessels being engorged with blood. Brown-Séquard considers it fully proved that the expired air, both of man and animals, contains a volatile poisonous principle, doubtless of organic nature, which is much more deleterious than carbonic acid.

Original Essays

"Life is not to live, but to be well."—*Martial*.

WORK AND EXERCISE.

BY DR. ALFRED CRESPI.

THAT man obtains, by well-directed and useful labour, those things necessary for his sustenance, and for the education and discipline of his mind, does not admit of question. To preserve health and strength, to have enjoyments and comforts which he alone among the inhabitants of the globe can obtain and enjoy, man must work bodily or mentally. In honest toil there is no degradation. Idleness alone is disgraceful. To live on what a man's labour has acquired, is noble and honourable. To live on the ill-paid toil of others, is degrading and dishonourable.

The laws of health may be remembered and put into practice, but if one law is neglected, and that law the practice of systematic labour, there cannot be, in the highest sense, peace of mind and vigour of body. These, above all else, make life happy and conduce to the preservation of health. No one suggests that the writer and the thinker should give themselves to manual labour, or that the statesman should relieve overtaxed powers by following the plough one or two days a week—although Lord Sherbrooke's passion for athletic exercise and Mr. Gladstone's skill as an axeman are instances of intellectual toil accompanying severe manual labour. What is meant is that every man born into this beautiful world can find work to do, and is bound to do it, whatever it is, conscientiously and energetically. In honest and useful work alone is contentment possible. As the evening of life approaches, and the toiler looks round and sees how much he has accomplished, there comes a feeling of unalloyed satisfaction, to which many a millionaire, who has passed his days in idleness and luxury, is a stranger. The humble mechanic, working at the bench, may in this sense be a nobler specimen of humanity than the lord of a large factory.

Some of the rules applying to the regulation of labour are most important, and on the due observance of them depends much of the success rewarding effort. The powers of the mind and of the body require, for their full perfection, to be developed and exercised. Although it does not follow that a man only cultivating half his powers is not leading a useful life, yet, unless mind and body are in vigorous working order, pleasure of the highest kind cannot result. The barrister or the physician may, each in his peculiar way, increase the happiness and prosperity of his clients; but his own health suffers and his bodily vigour is impaired, if, content with training and using his brain, his muscular powers are neglected and allowed to waste. The labourer, again, whose employment is manual, needs intellectual relaxation in his leisure to develop his higher nature, and invest his life with dignity.

There is common sense in the suggestion that every professional man should learn a trade, at which, in his spare hours, he could amuse himself. Unfortunately the customs of trade and the exigencies of a professional career, make such a thing impracticable. It is not necessary that the clergyman and the author should know how to shoe horses, or make nails. Most important is it, however, that no one, whose mind is severely

strained, should omit to spend some leisure moments in bodily work. Marked improvement in the health of many clergymen, for example, and a decided and welcome change in the tone of many sermons would be apparent, were the preacher to come oftener out of his study, and read that great book of Nature which is everywhere unfolded before human eyes. Work, manual and intellectual, was intended to be a pleasure, a privilege; and when it is not so viewed, something is wrong.

In mechanical labour most men are destined to pass their lives. What of that? Apart from other considerations, the mental discipline which every labourer could get from doing his task as well as possible might be invaluable. The carpenter at the bench, and the smith at the forge, may have their intellectual powers called forth and strengthened, and may be happy and contented throwing their energies into their task, and finding in it a labour of love, a boundless field for the display of ingenuity. But should they make a profession of their occupation, they would also need that mental training which is only to be obtained from books.

Vast improvements have been made in the internal economy of factories. The hours of employment have been shortened, and the manner of doing many kinds of work has been changed for the better. It should not be forgotten that anything affecting the happiness and health of millions is no trifle. Unwise and extravagant is it to urge the labourer beyond his powers, and expect him to work longer than his strength holds out. Overwork, amid unfavourable circumstances, is scarcely less unpardonable and injurious than idleness and self-indulgence.

Labour ought not to be begun in very early life. Setting aside the importance of calling forth the powers of the intellect by a few years at school, it is unpardonable cruelty to consign a child of eight to a factory. His body needs time and fresh air to grow in stature and strength, and the development of the muscles, and the consolidation of the frame, tax the youthful system sufficiently. Hard work and rapid growth cannot proceed together. The future career may be blasted by the selfishness and folly of parents in compelling a child to work while still very young. The physique and health of town labourers had commenced to deteriorate in consequence of the neglect of this important matter, when, fortunately for the happiness of the poor and the prosperity of the nation, the law interfered, and in a certain way took the young under its protection. Something has been done, but not enough. There is room for further reform in the same direction.

One of the greatest advantages which the wealthy possess is that their young people are not early sent out into the world, and when they pass into active life, are not compelled to attempt work beyond their strength. Lads often learn little at school, and are removed too early, as far as book learning goes; still as time is given them to grow and gain strength, they enter offices and shops better able to work hard and advance themselves. Partly in consequence of not being forced to work so early, there are among the well-to-do less sickness and greater longevity than among the poor.

Young men ought not to be closely confined and very hard worked. Care in these matters is repaid by greater usefulness and vigour in later life. Under any circumstances amusement and frequent change of air, good at all times and for all classes, are especially necessary to the young.

Persons employed in shops and factories should live at

a reasonable distance from their work; but never, when it can be avoided, actually on the spot where they work. A walk morning and evening is of service to them, and it is often found that overworked and unhealthy clerks get stronger and healthier, when they move to such a distance from their offices that they can enjoy a short walk several times a day.

Heavy work should not begin in the morning until a comfortable meal is taken. In the middle of the day a substantial meal is necessary, but food should never, whatever the excuse, be hastily eaten. It is bad policy to hurry through meals.

The place of employment calls for consideration. The workroom or office ought not to be small, but, whether small or large, should be well ventilated. In the former case this is not easy, as draughts can hardly be avoided; that shows the importance of large rooms. Probably it would often pay employers to attend to these matters. The outlay, no doubt a heavy one, incurred in building large, convenient workshops would be defrayed by the increased work that would be done, and the better health of the workpeople.

Persons compelled to stand while at work, and to use the muscles of the whole body, are usually healthier than the poor creatures who sit in an unnatural and cramped position. It is especially important that the latter should, whether fine or wet, hot or cold, walk a mile or two, morning and evening.

The employment selected ought not to tax the health and strength of the labourer. Light occupations should be selected for the small and weak, while unhealthy employments and those requiring great bodily powers should only be undertaken by the robust. Hard as it appears to condemn them to such a life, it is the healthy who ought to choose indoor work, while the feeble and unhealthy should, far oftener than now, work in the fields or in the open air.

Shop work is notoriously unhealthy. This is due to the heat and bad ventilation of shops and offices, and to the number of hours of confinement. It is inexcusable for respectable tradesmen to keep their shops open fourteen or fifteen hours a day. There is no necessity for such a state of things, besides, it is barbarous to confine assistants and apprentices so many hours. Labour, instead of a pleasure, becomes an intolerable burden.

Of all forms of exercise walking is perhaps the least useful, unless in company of friends whose pursuits are somewhat different, so that the conversation does not return to that topic already sufficiently engrossing the attention. For example, it is better that a clergyman and merchant should go out together for a stroll, than that both should select members of their own profession, although in the latter case the congeniality of taste and similarity of occupation give many men topics of conversation, and naturally attract members of the same calling one to another. Riding, shooting, and fishing are admirable; but some purely manual employment is still better. A large garden is a capital field for exercise, and in digging and otherwise working in it for two or three hours a day, and for four or five times a week, abundant pleasure and health would be found. In great towns, where gardening is impossible, clergymen and lawyers need not be ashamed of doing a little carpentry, or chopping up the wood for the fires. These are only crude suggestions, not inexorable rules, the great fact to be borne in mind is that some kind of manual labour is important.

Those are miserable creatures who make what they deem pleasure their occupation, and throw away their

lives in selfish and sensual pursuits. They squander the precious years of youth, and prematurely end their days in disease and disappointment. Every man, whatever his fortune and rank, should in youth follow some profession or occupation.

All labour is honourable. In every sphere useful work is possible; but care should be taken, when the opportunity presents, to select a suitable occupation. No ridiculous notions about the dignity of a profession should induce a fond parent to consign his son to an employment in which few succeed. Better for a man to be a respectable and hard-working grocer, printer, butcher, or draper, than a poverty-stricken and disappointed clergyman or doctor.

"LIKE BEGETS LIKE."

By DR. E. J. DUNGATE.

SEVENTH PAPER.

THE HEREDITARY TRANSMISSION OF HABITS AND APTITUDES.

GOETHE says:—

"Vom Vater hab' ich die Statur,
Des Lebens ernstes Führen;
Von Mütterchen die Frohnatur,
Die Lust zu fabulieren."

Goethe does not stand alone in thinking that as the features of ancestors are repeated in their prosperity, so also may their habits haunt their descendants generation after generation. The old saying, "the brave are begotten by the brave," shows how commonly it is believed that acquired qualities are transmitted by hereditary descent, and this transmission may be noticed throughout the whole animal kingdom.

Every one knows that in the horse such qualities as docility and restiveness are hereditary; so also are peculiar propensities, such as kicking and biting the crib, equally as well as broken wind, thick wind, spavin, founder, and so forth. It has been noticed that when oxen have not been used for ploughing for several generations it is extremely difficult to accustom them to it. A tamed tiger may be comparatively gentle until he has once thoroughly tasted blood, and then the fierceness of its nature manifests itself. A young fox has occasionally been entrapped alive, placed in a kennel, fed and otherwise treated as a dog; but as Crabbe remarks:—

"Fatten you may, but never tame, the beast,
A house protects him, savoury viands sustain:
But loose his neck, and off he goes again."

We can study hereditary habits with better success if we turn our attention to the lower animals, especially to those which man has thought it worth while to domesticate, because their lives are so short that one man can witness the peculiarities of several generations. The dog, "in life the firmest friend," is always near us, and giving us evidence of the way in which its acquired propensities may be transmitted to its offspring. The shepherd's dog affords an excellent example of the way in which docility may be inherited. Pointers and retrievers will often "work" quite as well, when first taken to the field, as though they had undergone a rigid preparation for the sportman's needs. A pointer which has been highly trained invariably produces puppies much more easily

trained than those of the original breed. On the other hand, as a writer in the *Edinburgh Review* (No. 84) says, "The pointer of pure Spanish race, unless he happen to be well-broken himself, which in the south of Europe seldom happens, produces a race which are all but unteachable according to the notion of a pointer's business."

In the "Philosophical Transactions" for 1807, Mr. Thomas Andrew Knight gives the following fact:—"A young terrier, whose parents had been much employed in destroying polecats, and a young springing spaniel, whose ancestry through many generations had been employed in finding woodcocks, were reared together as companions; the terrier not having been permitted to see a polecat, or any animal of a similar character, and the spaniel having been prevented from seeing a woodcock or other kind of game. The terrier evinced, as soon as it perceived the scent of the polecat, very violent anger; and as soon as it saw the polecat, attacked it with the same degree of fury as its parents would have done. The young spaniel, on the contrary, looked on with indifference; but it pursued the first woodcock which it ever saw with joy and exultation, of which its companion the terrier did not in any way partake."

Dr. Elam says, in that excellent work, "A Physician's Problems":—"Dogs that have been trained to hunt the peccari have offspring that seem from the first attempt to understand the proper (and very peculiar) mode of attack, whilst another and much stronger dog is destroyed at once by the savage creature." Ribot, in his "Heredity," remarks that "The American greyhound, instead of leaping at the throat of the stag, attacks him by the belly and throws him over, as his ancestors had been trained to do in hunting down the Indians." A St. Bernard dog, born in London, is said to have begun to track footsteps in the snow, after the manner of its parents.

In the *Westminster Review* for 1858, a writer gives a very interesting example of the transmission of an acquired habit. He says, "The writer had a puppy, taken from its mother at six weeks old, who, although never taught to beg (an accomplishment his mother had been taught), spontaneously took to begging for everything he wanted when about seven or eight months old; he would beg for food, beg to be let out of the room, and one day he was found opposite to the rabbit-hutch, begging for the rabbits."

It is said that in some breeds of pigs which have been taught to search for truffles, this acquired habit has become hereditary, but this is not to be wondered at, seeing that it is only a specialization of a habit which is natural to them.

Dogs who return to a wild state give up the habit of barking. Prichard, in his "Natural History of Man," says, "It has been conjectured that barking originated in an attempt to imitate the human voice; however that may be, wild dogs do not bark. There are numerous troops of wild dogs in South America, principally in the Pampas. There are also in the Antilles, and in the isles on the coast of Chili, similar breeds. These breeds, in recovering their liberty, have lost the habit of barking; like other uncultivated breeds of dogs they only howl." Pouchet also remarks that there are dogs in some countries which never bark. In Juan Fernandez there are dogs, the progeny of some left by the Spaniards in order to kill off the goats, and they are not known to bark. M. Roulin says that the cats in South America have lost those "miaulemens incommodes" (troublesome mewings) which sometimes make night hideous in our own land.

* From my father I inherit my frame, and the steady guidance of life; from dear little mother my happy disposition, and love of story-telling.

Goethe says further:—"My ancestor was a 'ladies' man,' and that habit haunts me now and then; my ancestress loved finery and show, which also runs in the blood. If, then, the elements are not to be separated from the whole, what can be called original in the descendant?"

Gratiolet relates, in his "Anatomie Comparée du Système Nerveux," that an old piece of wolf-skin, placed before a little dog, threw the animal into convulsions by reason of the scent attached to it. The little dog had never seen a wolf; consequently this can only be explained by reference to hereditary transmission of sentiments. This transmission of sense-perception is further illustrated by Dr. W. B. Carpenter in *The Contemporary Review*, Vol. xxi. "It is well-known to those who have had a judicious training in nursery management that an infant will sleep much better and will awake at longer intervals *away from* its mother or wet nurse than it will when *reposing with* her; the 'smell of the milk' acting as the excitant to the instinctive search for it, just as the hen's call or the ewe's bleat brings her offspring to her." Then in connection with this subject the same writer quotes an experiment by Mr. Spalding. "Chickens hatched and kept in the bag for a day or two, when taken out and kept nine or ten feet from a box in which a hen with chicks was concealed, after standing for a minute or two, uniformly set off straight for the box in answer to the call of the hen, which they had never seen and never before heard. This they did, struggling through grass and over rough ground, when not yet able to stand steadily upon their legs." Dr. Carpenter further remarks that, on the other hand, a turkey only ten days old, which had never in its life seen a hawk, was so alarmed by the note of a hawk secreted in a cupboard, that it fled in the direction opposite to the cupboard with every sign of terror.

The following has been sent to the writer by Mr. Allison, of Brisbane, a careful observer of nature. "We were speaking the other day about hereditary instincts. A very singular and somewhat striking instance of what seemed to be hereditary instinct came under my notice some years ago. It happened one afternoon that I was in the company of an old gentleman who was at the time driving a high-spirited little mare, Cassandra by name, whose mother was a pure Arab. Cassandra was foaled in Queensland, and had never galloped bitless and free over the arid plains of Araby, nor had she ever known anything more unfriendly than the coachman's whip—the touch of which she seldom needed. We were driving along a quiet country road, and presently we came to a small bridge, where she suddenly came to a dead stop, in other words she *jibbed*—a thing she had never been known to do before. She pricked up her ears, snorted, and trembled in every limb. Coaxing, and finally a cut or two, failed to move her, in fact she seemed almost inclined to treat us to an exhibition of rearing. My friend, who was a kind and somewhat nervous old gentleman, remarked, "Very well, if you don't like it we'll not go over," turned the pony's head, and trotted the other way. We afterwards learned that a few minutes previously a donkey-cart had crossed the bridge, and I have since been given to understand that the smell of an ass is not unlike the smell of a lion. My impression is that 'Cassy' thought that one of her natural enemies was not far off, and that the sooner there was some distance between them the better." The explanation which Mr. Allison gives seems to be satisfactory; but nothing very certain can be said on the subject, because the mare may have had for some reason or other a strong dislike to donkeys.

We remember having heard of a similar instance of sense-perception. A menagerie was temporarily settled in a country-town in England. When it went away, some of the straw which had been used for the lion was

not considered unfit for further use, and it was accordingly taken by a stable-boy into his master's stable. The straw was no sooner brought into the stable than the horses were thrown into such a violent state of excitement that it was found necessary to remove it at once.

It is found that a good impression of any article of metal having a flat, ornamental surface may be taken by wetting some note-paper with the tongue and smoking it over a gas flame. The article is then pressed upon the smoked part, when, if the operation be carefully conducted, a clear impression is the result.

DENSITY OF LIFE IN GLASGOW.—Dr. Russell says:—While the average density of all Glasgow is 84 persons per acre, the local density varies from 25 to 348 in the 24 sanitary districts into which the city is divided. You can apply for yourselves to these facts all that I have said as to the evils of density. If we classify all the houses in Glasgow, we find that in every 100 there are 30 of only one apartment, 44 of only two apartments, 15 of three, and only 5 of five apartments and upwards. This enormous proportion of small houses will sufficiently explain the low average rental of a Glasgow house. The hovels of the East completely swamp the palaces of the West, and produce an average of only £11 6s. 9d. The size of this average house is only 2·3 rooms, each occupied by two persons fully (2·042). The highest average of rooms per house in any district is a little over 4 (4·046); the lowest scarcely 2 (1·679). The highest average of inmates per room is about 3 (2·94); the lowest $1\frac{1}{4}$ (1·25). I am unable to give you parallel statements regarding any other city, because the data have not been worked out. Indeed, the materials do not exist, excepting for Glasgow, so that I may ask you to note this fact, that the authorities of Glasgow have a minute knowledge of the physical condition of their people which no other authorities possess, and therefore ignorance cannot be pleaded in extenuation of any backwardness in improving this condition. I can, however, give you the exact comparative position of your city among the eight chief towns of Scotland as regards the proportion of their populations living in the various sizes of house. Mr. Bright gave the proportion of families, but it is of more importance in estimating the extent to which the advantages and disadvantages of house-room are imposed upon the population to ascertain the proportion of individuals. Of the inhabitants of Glasgow, 25 (24·7) per cent. live in houses of one apartment; 45 (44·7) per cent. in houses of two apartments; 16 per cent. in houses of three apartments; 6 (6·1) per cent. in houses of four apartments; and only 8 per cent. in houses of five apartments and upwards. There is no town in Scotland which has so large a proportion of its population living in one-roomed houses. There is no town in Scotland which has so small a proportion of its population living in houses of five rooms and upwards. In Edinburgh, above 27 (27·3) per cent. of the people live in houses of five apartments and upwards, and only 17 (16·8) per cent. in houses of one apartment. The dreadful struggle for life in Glasgow as compared with Edinburgh is shown by the fact that in Glasgow one-roomed houses contain more inmates on the average than in Edinburgh, and the large houses fewer. But even in Glasgow there are only 7·8 persons in the large houses, as compared with fully 3 in the one-roomed houses—a difference in the physical circumstances of these two classes of citizens which alone places them far as the poles asunder in respect of the preservation of health and the opportunity of pure living.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—Gay.

CHRONIC INDIGESTION.

THE chronic form of indigestion is due to errors in diet frequently repeated, to the impoverishment of the blood and consequent debility of the whole digestive apparatus, the result of long or frequent exposures to malarious influences, or to imperfect recovery from acute and exhausting diseases, or to continued indiscretion.

Symptoms.—These are discomfort or pain in the region of the stomach, more or less intermittent and spasmodic, experienced usually within two hours after eating, attended often by much flatulence and eructations of a hot sour fluid; sometimes by giddiness and headache. All these symptoms are much less severe than in acute indigestion. Sometimes they follow the meals at long intervals, at others, not; at times they are accompanied by diarrhoea alternating with constipation. The tongue is usually coated and "sticky," the head uncomfortable, and the mental faculties depressed. In common parlance, the dyspeptic always feels the presence of his stomach. (Generally speaking, a chronic disease is one that lasts more than six weeks.)

Remedial Measures.—These should begin with simplifying the diet, taking food regularly but often, and in smaller quantities than usual, using only meat that is easily digested; making some of the cereals with milk into gruels, or taking milk, that has been predigested with Zymine, either alone or with egg-custards. Plain wheat bread, if good, or toast, or biscuit may be added.

Vegetables and condiments should be discarded, except where there are *idiosyncrasies*.

Where there is a "sour stomach," the administration of two to six sodium bicarbonate tabloids will afford immediate relief; though to cure the tendency to acidity, potassium bicarbonate tabloids should be taken, and may be relied on.

For an ordinary case of indigestion, probably there is nothing better than a peptonic tabloid after each meal. For pain, nux vomica is the agent. Five to ten drops of the tincture may be taken in a wineglass of water. Its effects are felt at once. It should be noted that five drops of dilute muriatic acid in a wineglass of water, before meals, cures sour stomach. Quinine and nux vomica may also be taken. For those troubled with indigestion from starchy matters, a little Kepler Extract of Malt is the thing required.

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THE MORALITY OF THE BATH.

By ANNIE J. MILLER.

FOR pure luxuriousness, the delights of a Turkish or Russian bath are supreme. There is such a sense of comfort and repose in the first exposure to the heated atmosphere, such exquisite abandonment to the moment, such a delicious *rapport* with all of the conditions of one's surroundings, especially if, as is now the case in our larger cities, an effort at splendor in finishing has been made. To a toiler in the busy world, whose nerves and brain are constantly at high pressure, the sudden transition into the dreamy languor of perfect rest is so grateful that one closes the eyes with a wish that the moment were eternal. The genial warmth suffuses the body and wraps the material senses in a dream of tranquil delight. Pictures, unbidden, come and go before the mental vision, not tiresome efforts at far-fetched subjects which, happening to be an artistic craze, one must admire *sans raison*, but restful idols born of one's own pure and fervid imagination; for the consciousness of cleansing conveyed to every separate orifice of the external membrane by the warmth and vapor acts like a charm upon the mind, lifting it above the dreary commonplaces of a too material world.

This sounds like rhapsody to one unacquainted with the modern bath, but those who have had experience will challenge contradiction of the foregoing and defend the bath with zeal born of its vitalizing effects, for the first soothing touch of the hot room is superseded by renewed power of mind and increased bodily energy. But the difficulty with the Turkish bath, as established in our country, lies in the fact that it is an expensive luxury, beyond the means of the many, and there does not seem to be any immediate prospect that it will be brought within the reach of the masses unless legislation in the interest of humanity and morality shall provide for it. As all of our tactics as a nation are directed toward suppressing and punishing vice, rather than eradicating by development and purification so that evil like a loathsome serpent shall trail its hideous lengths away from the gaze of men and hide in the jungle of obscurity, there is little prospect that our law-makers will be brought to see the necessity for appropriations for purposes of individual purification. To wash sin out of a man or woman must be a sentimental process and contrary to the stern dignity of the law, which has nothing to do with eradicating evil germs, but is instead a very Samson of suppression.

It seems so much more in keeping with the awe-inspiring greatness of a nation to show substantial jails, ornamental reformatories, and impregnable prison walls, provided by the law abiding tax-payers, than to point visiting strangers to public Turkish baths and free gymnasiums at easy distances all over a large city; though the latter might entice vicious little street gamins from the horrible fascinations of the dens of bestiality in which they are now learning the alphabet of penitentiary crimes. Perhaps, however, private charity, which has done so much in other directions, may some day make a move in the matter of introducing free Turkish, Russian, and Roman baths; it is certainly to be hoped for, since what has been accomplished in other departments would encourage the belief in a large haven of cleanliness if once these practical philanthropists were aroused.

For the present, however, the Turkish bath remains the luxury of those who can afford to pay for it; and if its wonderful curative and invigorating powers were better understood, no doubt many more persons than do now would avail themselves of its privileges. It is said

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that larger numbers of men than of women patronize the bath, and when one realizes what an inconvenient harness women must be divested of before they are in condition to enter the hot or vapor-room, it is no wonder that many sigh for the luxury but lack the courage to undergo the work of disrobing for it.

In the ancient days of Greece and Rome the bath was an acknowledged necessity, and the very acme of true hospitality was observed by offering one's visitor the courtesy of the bath. The superior development of the early Greeks and Romans was due in great part to the daily patronage of the bath and gymnasium, and it was not until fabulous wealth acquired by conquest had enervated the habits of the people, so that the vigorous development of the bodily powers had been sacrificed to the temporary delights of the senses, that the decline of their ancient glory began.

We of the present are, however, in a position to profit by the virtues no less than by the mistakes of decayed nations. Just as the master spirits of the century which saw our birth as an independent nation studied and weighed the principles of every form of government, and out of the experiences and failures of those who had preceded them embodied the vital points of a constitution which should be enduring, we of the present day ought to study the principles of those higher forms of bodily and mental development which shall insure our moral and intellectual greatness. Toward this end the frequent patronage of the Turkish or Russian bath will contribute more largely than at first appears.

Aside from pure pleasure as a personal indulgence the tonic qualities of the bath cannot be estimated. The skin is quickened into health, and the nerves are relaxed and subdued by the heating process, while the kneading, rubbing, and anointing harden the flesh and give elasticity to the muscles. The half hour of repose, and perhaps sleep, on a soft couch prepares the stomach for the digestion of a substantial meal; and if followed, when the processes of digestion are well under way, by a half hour of gentle exercise in the gymnasium, or at home in a systematic course of muscular exercise with a current of pure air circulating through the rooms, the effect would be perfect. But after all has been done, when the brain has been relieved of the pressure of blood, when nervous tension has been overcome, and the skin purified so that every pore has become a grateful mouth ready to drink in invigoration from contact with the sunlight and air, when the lungs are expanded and in the integrity of their own honest purposes are demanding freedom for their natural functions, what crime is greater than to don the present fashionable costume of woman, and tightening the corset-lacing, deprive lungs and heart of natural activity, so that their work becomes like the irregular flutterings of a caged and imprisoned bird?

The Turkish bath and daily attention to physical exercise are important steps toward a rational improvement in women's dress, for the body having once tasted generously of the joys of freedom will assert itself, and, uniting with the brain, demand naturalness and consistent relation between its own structure and that which clothes it. In beginning the bath, reason and moderation should prevail, and one must not, with the usual enthusiasm (or perhaps impulse is the better word) of our nationality, rush headlong into the indiscretions of too great exposure. For the first bath a few moments only should be spent in the hot room, else the benefits may be lost in the reaction. It is well to remember that the change from the mild manner of sponging and sopping the skin dry, which has before been designated "taking a bath," is a very different

affair from the operation which proposes nothing less than divesting one of a portion of the scarf skin itself. In coming out of the shampooing-room there is no cause to stand and shriek at the approach of the cold spray, one should rather invite it and aid the good already done by manipulating the different members as the grateful and refreshing shower falls upon them.

The result of so much purification and invigoration will show itself in bright eyes and a glowing skin; while a deeper sympathy with deeds of worth and charity, a purer good-will toward one's fellow-creatures will animate the mind and stimulate fresh interest in promulgating the truths of cleanliness as taught within the walls of any thoroughly equipped Turkish or Russian bath.

NATIONAL REGISTRATION OF PLUMBERS.—The medical officers of Liverpool and Birkenhead, Drs. Taylor and Vacher, have recently rendered valuable aid to the registration movement, and the Liverpool Architectural Society has also assisted by a discussion of the subject, and a resolution in favour of forming a district council in Liverpool to act in conjunction with the Plumbers' Company in registering the plumbers of Western Lancashire. These aids have been supplemented by an important discussion on the evils of unsanitary plumbing at the Liverpool Medical Institution, resulting in a resolution moved by Dr. Steeves and supported by some of the chief medical men of the city, approving the principle of registration of plumbers, and ordering "that copies of the resolution be sent to the chairman of the Liverpool Health Committee, and also to the chairman of the various local boards throughout the district." The registration of plumbers in Scotland is proceeding apace, some three hundred additional names being advertised, the list including some of the leading men of the trade in each district. On Friday last a meeting of the District Council of Sussex was held in the town-hall, Brighton, and there were members present from Eastbourne, Hastings, and other parts of the county.—*Building News*.

EFFECT OF THE ATMOSPHERE ON BRICKS.—Atmospheric influence upon bricks, tiles, and other building materials obtained by the burning of plastic clays depends very much on the chemical composition of the clays and on the degree of burning. Thus any distinct portions of limestone present in them would be converted into quicklime in the kiln, and when the bricks were thoroughly wetted would expand in such a manner as to disintegrate the mass. If the clay used is too poor—that is to say, if it contains an excess of sand—the bricks will not become sufficiently fused, and upon exposure to the weather their constituent parts will separate. It is to be observed that in bricks, as in stones, decomposition does not take place with the greatest rapidity where constant moisture exists, but rather where, from the absence of capillarity, variable according to the moisture furnished by the atmosphere, either directly or indirectly, a series of alternations of dryness and humidity prevail. The foundation walls of buildings do not in fact suffer so much in the parts immediately upon the ground as they do in those at a height of from one to three feet, according to the permeability of the materials employed. When bricks made of clay containing free silica are laid in mortar, and moisture can pass freely from either one or the other, it may be observed that the edges in contact become harder than the body of the bricks. No doubt this arises from the formation of a silicate of lime and alumina, the lime being furnished by the passage of the water through the bed of mortar.

Public Health

"Health is the first Wealth."—Emerson.

THE WATER QUESTION.

THE inquiries of the medical profession into the causation and modes of propagation of disease have of late years wholly changed the character of the accepted views on water and water-supplies. First, the mineral constituents dropped out of consideration as having, practically, but little connection with the causation of disease. Organic matter was held to be the dangerous element, and for some time the presence of a stated quantity of this matter was conceived to warrant the condemnation of the water which contained it. The attention of all those interested in preventive medicine became concentrated on the organic matter, to discover the means of discriminating between harmless and harmful substances, but before much was accomplished in this line of investigation the able workers from the etiological side of the inquiry had hunted down the causes of the diseases usually propagated by the water supply, and found them to be not organic matter merely, but vitalized matters. At present, therefore, the sanitary question concerning a water is neither as to the wholesomeness of its dissolved solids nor to the quantity of its organic matter, but whether or not it contains any of the germs of disease.

It is impossible as yet to answer this question by direct observation. The cholera bacillus may be recognized and cultivated, but it is an exotic, and of interest only from time to time. The germ of typhoid, which we have with us at all times, has yet to be identified in water, although we know by sad experience that it is there, and the same is true of our indigenous malaria. Until the existence of these germs in water can be recognized, the best method of determining the sanitary quality of a water is to study its history and establish its freedom from any likelihood of containing a specific infection. Practically we have to deal with but two of these—the two just mentioned. Surface waters may contain both. Percolated waters, *i.e.*, those from springs and wells, contain only one, the typhoid infection. The filtration which the water undergoes in its passage to the well or other outlet removes the malarial infection. It is the surface water charged with vegetable matters from the swamps and marshes of some part of its course, or from decaying wood and foul sediment of its containing cistern that causes malarial troubles. The water from good-conditioned wells has never been arraigned on this charge. Water-supplies should, therefore, cease to be a factor in the propagation of malarial diseases. The remedy is known and is easily applied. Even on the large scale, for cities, it is only a question of dollars. This simplifies the subject by leaving only the typhoid infection for consideration.

Some doctors hold that typhoid fever always arises by the infection from a previous case; others consider it possible for the disease to be generated by a conjuncture of favourable conditions, but even these allow that its subsequent spread is chiefly occasioned by its infectious characteristics. This infection lies in the discharges from the bowels, and if these, by leakage from the sinks, cess-pools, or sewer-pipes, succeed in percolating into a well, spring, or cistern, the water-supply contained in it will become infected and propagate the disease, for filtration through the soil does not remove the germ as in the case of malaria, nor, so far as known, does it lessen

in the slightest the virulence of the filtrating infection. On the contrary, there seems ground for believing that in favourable conditions the germs will multiply rather than diminish. So, too, the infected discharges entering a stream, pond, lake, or other body of water will render its water as dangerous to the individuals using it as the water of an infected well. Hence the importance attached to the freedom of a water from sewage. The sewage of a single house may be harmless, but the sewage of a city must always be regarded as infected, because the discharges from a single case of typhoid fever will suffice to leaven the mass. Germicides, applied to the discharges before their committal to the sewers, will destroy the infection, but if this precaution be not taken the river or other body of water which receives the sewage will become a danger to the health and lives of those who use its waters. Typhoid fever is indigenous in our cities. The disease is carried from the upper to the lower settlements by the course of the stream. The water companies and municipalities supply it daily from the faucets, and, because money has been invested in their plant, this distribution of disease and death goes on, and is noted officially only in the reports of the health officers as so many deaths from typhoid fever during the week or month or year, as the case may be. Not that any connection is shown between the one and the other; on the contrary, the typhoid death-rate is seldom reported *en rapport* with the water-supply which caused it, unless, as at Plymouth, Pa., the fever becomes a scourge on the community, and frightens its members into an acknowledged acceptance of the demonstrable facts. When a stream has once become infected there is no known remedy. Aeration and oxydation destroy the organic matters that are harmless, but not the vitalized matters that are harmful. These are not subject to the operation of oxydating causes until they have lost the vitality in which lies their virulence. Individuals may boil their drinking supply and so destroy the germs, but this cannot be done on the large scale for municipal distribution.

There seems but one way out of the difficulty. Water which contains sewage should not be used as drinking supply. The supply for a city depends on the conditions of the locality; but the grand general principle, involving purity and freedom from preventable disease, should never be lost sight of in questions of finance and engineering. The country is growing rapidly, and under present conditions of sewage-disposal and water-supply the typhoid rates of death and disability must increase to the detriment of those communities who shall have failed to appreciate the necessity for wholesome water. In a general way, and as an axiomatic principle, everyone acknowledges the desirability of pure water; but collectively we act as if we had no saving knowledge, or as if we were fatalists, ready to drink the draught and trust to luck to escape its consequences. Only among the ranks of the sanitary men of the country—the members of the American Public Health Association—among whom are aggregated the prominent health officers of states and cities, we do find a realizing sense of the actual condition of affairs as regards water-supply and sewage-disposal. These men understand the causes which kill six, eight, or ten persons annually, instead of one or two, out of every ten thousand living, which disable as many again permanently, and from ten to twenty times as many temporarily. They appreciate the growing influences which give virulence to these causes and are able to outline the sickness and mortality of the future from the records of the past. We look to them for improved con-

ditions in the present and the avoidance of disaster in the future.

We have been led to these remarks by reading a copy of the report of the committee on water-pollution appointed by the association. The importance of the work of this committee cannot be over-estimated. Its conclusions, so far, assert the harmfulness of sewage in waters used as a potable supply, whether these are derived from wells or from larger sources; whether the supply of an isolated dwelling or that of a populous city; but, in the language of the report:

"The measures to be recommended in consonance with the views submitted are hedged with difficulties on account of the relations which one community bears to another; nor will one cast-iron rule suffice for all cases. The abandonment of a sewage-polluted supply may be imperative in one case, while the exclusion of certain dangerous contaminations may guarantee protection to another community. The influence of chemical treatment on the infectious principles of the excreta of disease comes up for consideration, as well as that of the filtrations, which are effected not only by irrigation and other modes of consignment to the soil, but by artificial means conducted on the small scale occasionally by the consumer, and on the large scale by the municipality or the water company.—*The Climatologist*.

PERSPIRATION OF THE FEET.—A writer in a contemporary advises the use of a foot-bath of nitro-muriatic acid. It need not, of course, be strong, but just pleasantly acid. He states that he has employed this treatment for a long time past with marked success. Another correspondent referring to this distressing complaint, says he has found the most satisfactory results from the use of the following: Salicylic acid, two parts; burnt alum, three parts. This is to be well mixed and dusted on the feet. At first he used it every night, but afterwards found that an application once a week was sufficient, and he avers that it has never failed.

FOREIGN MATTER IN THE EYE.—"A Doctor of Medicine," writing to a popular journal, says, with the sole exception of mortar or lime, it is well to remember that, no matter what it is that has got into the eye, the eyelids should be kept closed for as long a time as possible, without being rubbed or even touched. The reason for this is that there exists in the outside corner of each eye, and just under the upper eyelid, a little gland, which is constantly secreting and pouring forth a fluid which we call *tears*. This fluid lubricates the eye-ball, and then runs down a little tube from the inner corner of the eye into the nose. This little gland always secretes more fluid, and fills the eyelids more quickly, under the influence of emotion, grief, or pain. In such cases the eye-ball will quickly be thoroughly washed, and the foreign body will flow with the *tear* to the bottom of the inside of the lower lid, and so pass out of the eye through the little tube into the nose. Then, on opening the eye cautiously, it will be found that the pain has gone, if the eye has not been touched or rubbed to prevent this natural action of the overflowing of the tear. Of course, when a speck of lime has got into the eye, this passive treatment will not do. The eye then should be immediately washed with a lotion composed of a teaspoonful of vinegar to two ounces of warm water. After this has been done for some little time, a drop or two of oil of sweet almonds should be dropped into the outer corner of the eye, which should then be allowed to rest in the dark.

THE PROPER USE OF ANTISEPTICS.

We often neglect the use of antiseptics because they do not happen to be in convenient form at the time of need. The following methods are found to be of practical utility.

1. *Bichloride of Mercury Solutions.*—Corrosive sublimate, two hundred and thirty-two grains; muriate of ammonia, twenty grains; glycerine, three ounces; rub the bichloride and ammonia together in a wedgewood mortar, until thoroughly fine; then add the water, after this the glycerine. The ammonia is simply added to produce greater solubility of the mercury. Keep in a bottle with the prescription pasted on. One drachm of this solution contains seven and a quarter grains of the bichloride. One pint of water added to one drachm of this solution gives 1-1000. One drachm of this solution added to two pints gives 1-2000. One drachm to three pints gives 1-3000, &c. The 1-1000 solution may be used upon the skin preceding a surgical operation, and for washing the hands, towels, instruments, and to wash out the wound the first time after the operation. The 1-2000 is used in irrigating and to rinse the sponges. The 1-5000 may be used as an internal wash and for abdominal operations.

Boracic Acid.—We have the crystals and the impalpable powder. A solution of boracic acid may be kept for general use. Take boracic acid, cryst., four drachms; thymol, pulvis., twenty grains. Dissolve the boracic acid in a pint of boiling water. Dissolve the thymol in an ounce of alcohol, then mix the two and add two ounces glycerine. This solution may be used with compresses on wounds and may be diluted by adding one to eight parts of water, according to the case. The impalpable powder may be used in surgical operations by means of a pepper-box, applying it with impunity.

Oil of Cade.—This is regarded as an excellent dressing in surgical wounds. The method of using is as follows; Cheese cloth is saturated with a mixture of one part of cade to three parts of pure olive oil, wringing out the gauze to dryness. A sheet or two of this over the wounds protects the parts and corrects all foul discharges. The adhesive process or the granulating process proceeds nicely under its use.

DOMESTIC ECONOMY in most of our homes too often is a term wrongly applied to domestic wastefulness. A movement is on foot in connection with the extensive sanatorium at Battle Creek, Mich., which will give a correct idea of domestic economy to those who take advantage of it. The necessity for scientific instruction in many of the domestic arts has led the authorities at the sanatorium to organize a school of domestic economy, which was to be opened about the middle of March. The course of instruction will continue twenty-five weeks, and will include daily lectures, recitations, demonstration lessons, and practical drills in the following subjects: Scientific cookery, laundrying, dress-making, general housework, household hygiene, including ventilation, heating, disinfection, renovation of sick rooms, sanitary care of the house, purification of water, detection of food adulteration, &c., personal hygiene and the hygienic care of children. Keeping of accounts and other necessary accomplishments will be taught. Certain qualifications are to be required, and a fee is charged, but arrangements can be made by which the fee can be paid in labour without interfering with the course of study. The incompetent servant girls who afflict all our large cities, and the equally as incompetent wives, would be considerably decreased by the general establishment by large institutions of a semi-public character of such schools.

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—Charles Mackay.

VEGETABLE AND ANIMAL ALBUMEN.

By W. BERNHARDT.

(Concluded.)

THE conformity existing between the nitrogenous compounds of vegetables and animals is not limited to the proteids mentioned, but extends to various products of their decomposition: Diastase, the fermentative agent originating from proteids in the seeds of many plants during germination, is also present in the saliva of animals, where it exerts upon amylaceous foods the same action of forming sugar from starch. Agents very similar to pepsin, the digesting ferment of the stomach, are to be found dissolved in the juices of various plants; upon contact with muscular fibre, or coagulated albumen, or cheese, they will dissolve these bodies, and transform them into peptones as well as pepsin does. Thus papayotin, a substance extracted from the juice of *Carica papaya*—a kind of fig-tree—is therapeutically applied for dissolving morbid membranes and tumours; not less are the well-known insect-devouring properties of the leaves of *Nepenthes*, *Drosera*, and *Utricularia*, due to the presence of such ferments in their viscid secretions. Leucin and tyrosin, amides occurring in the roots of plants, which are both products of decomposition and regenerators of albuminoids, are also found in animal organs. The inflammation of skin, caused by touching a nettle, has been ascertained to be due to a kind of decomposed, or changed, proteid; and the virulent properties of the secretions contained in the venom glands of serpents having become known to depend on proteids. The conclusion appears well-founded that the virus of insects and other animals also owes its pernicious effect to metamorphosed albuminoids, too, rather than to formic acid, as had been hitherto believed.

Many facts have been produced to show that, as the theory of evolution supposes, there is a degree of consanguinity existing between plants and animals: sexual differentiation, for instance, is common to the higher forms of both of them. Sexes in both cases are sometimes united in the same individual, sometimes separated. The lowest species of both of them, consisting of single cells, propagate by simple division. Scarcely a characteristic has been discovered in these living cells of plasma, which might justify the making of a distinction between plants and animals. The voluntary movement ascribed to the latter class is not plainly discernible in many cases, while many low plants, such as *diatomaceae* and certain bacteria are eminently and continually engaged in lively motion. No striking difference is to be observed in the sources of food and in the way in which it is taken. If to these facts the results of chemical investigations be added, showing that many constituents of the greatest vital importance in both are identical, and that a close relationship of others (vegetable and animal fats) is beyond doubt, we may justly claim that chemistry has contributed and will further contribute considerable support to the doctrine of evolution, if identity of matter may be regarded as evidence of consanguinity, or as a proof of common descent.

Considered from another point of view the mutual relations existing between both classes of beings are of a decidedly hostile character. The fierce "struggle for life," which causes animals to kill and to devour their fellow-creatures, is in a not less merciless degree extended to plants, and victory is not, as we might fancy, always on the side of the more perfect creature. Even man, the most accomplished being, and at the same time the most relentless despot on the earth, though without much personal trouble he may fell the strongest trees and eradicate whole forests, is yet liable to succumb to the attacks of a few micro-organisms invisible to the human eye. A theory, at first pointed out by Pasteur, accepted by Virchow, and of late experimentally confirmed by Metschnikoff, teaches, that certain low plants, fungi, called microbia, or bacteria, said to be the primary causes of infectious diseases, when entering the circulation of blood or one of the important organs of the body, become at once engaged in a struggle with the living cells of the organism, both adversaries endeavouring to kill and to devour each other; the result of this fight, if the microbia are victorious, is said to be the death of the animal.

In a lively and perspicuous representation Metschnikoff has described one of these destructive combats. *Daphnia*, a sweet water crustacean, served to him as the first object on which he could observe the attack by monospores, a fungus of the lowest order. As soon as the latter began to invade the body of *Daphnia* it became surrounded and entangled by numerous cells (*leucocytes*) engaged in lively motion, which gradually from all sides attached themselves to the fungus and destroyed it by some kind of intercellular digestion, or absorption. It is evident that a single cell could not afford to give out so much dissolving matter as was required for this purpose; it would even probably have succumbed to the enterprising enemy; but by the assistance of its confederates it succeeded in overwhelming the intruder. In eighty cases out of a hundred, according to Metschnikoff, the cells would be victorious, but in twenty cases the fungus would gain the battle, with the consequent death of the *Daphnia*.

Concerning this view and interpretation of the origin and progress of infectious diseases, we are inclined to believe that, since bacteria have not been found in all of them, and since, where they are present, also certain products of chemical decomposition of proteids, ptomaines, occur with them—the dangerous phenomena and the lethal end of such diseases should rather be ascribed to the well-known virulent properties of these products, as is done by many eminent physicians. Bacteria may frequently be the bearers and transporters of disease, as flies are accused of communicating the virus of splenic fever to healthy individuals.

The germ theory, which declares micro-organisms to be the cause and originators of infectious diseases, although it seems to be at present recognized by many physicians, perhaps by the majority of them, is as yet far from being thoroughly established. The action and influence of bacteria have evidently often been exaggerated. Pneumonia was ascribed to them, until it was found that in some pneumonic cases bacteria are present, whereas in many others none could be found. In hydrophobia a particular micro-organism, although most eagerly sought for, has not yet been discovered. The possibility, however, of transferring this disease from one to another animal by inoculation indicates that the virus may consist of some kind of decomposed proteid, acting as a chemical ferment upon certain constituents of blood, or nervous substance. We may, by the

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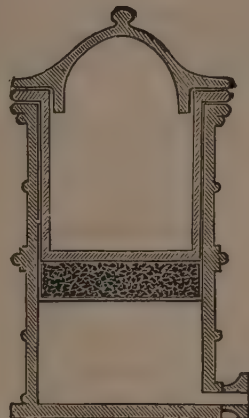
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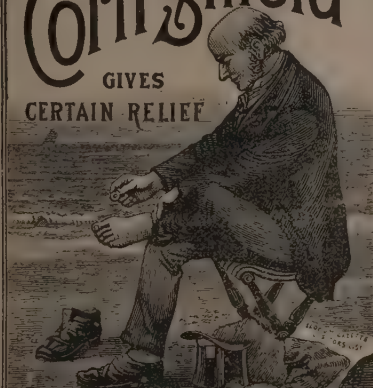
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PRICE LISTS FREE ON APPLICATION.

existence of such ferments as diastase, pepsin, or as the virus of serpents and insects in healthy individuals, conclude that other not organized ferments exist in and are the cause of morbid conditions; and although most of the fermentative processes, on which epidemical diseases depend, seem to be induced and to increase by the agency and propagation of bacteria, there is no reason for making them accountable for other troubles to the extent that has hitherto been done. There are organized and unorganized ferments existing, both of which are known to produce decomposition of organic matter. We hope and expect that the future will decide what effects in animal and human diseases belong to each of them.—*Popular Science Monthly.*

TREATMENT OF SCIATICA BY REFRIGERATION OF THE SOUND LIMB.—Some time ago M. Debove announced that he had been able to afford marked relief in a case of obstinate sciatica by means of a spray of chloride of methyl applied along the course of the sciatic nerve in the unaffected member. At a recent meeting of the Société de Biologie, M. Raymond reported that he had obtained favourable results by a similar method in three cases. He found, however, that the effect was the same even when the spray was directed to any part of the limb, and not necessarily along the course of the sciatic nerve. This would seem to prove that the relief of the pain was due to an impression made upon the spinal centres by refrigeration of the peripheral nerve terminations, rather than to a direct influence exerted upon the trunk of the affected nerve itself, or of its fellows in the opposite limb.—*Med. Age.*

THE LONGEVITY OF BIRDS.—The human race is not the only one that has the privilege of furnishing centenarians. There are several birds that have the pretension to easily reach the age that M. Chevreul has attained. Among the candidates for the prize for longevity, says the *Eleveur*, must be cited the eagle, the swan, and the raven, which live for over a century. The parrot, as well as the heron, is content to become a sexagenarian. The sparrowhawk lives to the age of forty, which is the age likewise reached by the duck and pelican. The peafowl lives to be twenty-five, the pigeon twenty, the crane twenty-four, the linnet twenty-five, the goldfinch fifteen, the lark thirteen, the black-headed warbler fifteen, the blackbird twelve, the canary bird twenty-four, the pheasant fifteen, the thrush ten, the domestic cock ten, the red-throat twelve, and the wren three.

WHERE THERE'S A WILL THERE'S A WAY.—The *Handelsmuseum* states that the Austrian Consulate at Bombay, in consequence of the imposition of an import duty of six rupees per gallon on so-called Eau-de-Cologne, which had hitherto been free of duty, has reported as follows:—It is stated that large quantities of this article of very inferior quality and only slightly perfumed have been imported, in order to serve the natives of both sexes as a favourite beverage. Even Hindoos of the higher castes and Mahomedans indulged with pleasure in the enjoyment of a beverage which is certainly intoxicating, but permitted according to their religious notions, and which, moreover, was very cheap. A small flask of this so-called Eau-de-Cologne used to be sold in the bazaars at two annas, twelve Austrian kreutzers. The imposition of a duty of six rupees, which, as compared with its value, is very high, will probably diminish the consumption of the article very much, and perhaps stop the trading in it altogether. A Vienna firm used to send every month enormous quantities, but is now compelled entirely to relinquish its exportation.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Unwholesome Bath-Rooms.—In our last issue we had occasion to refer to some of the advantages of cold bathing in suitable cases. An unfortunate occurrence, which was lately the subject of a coroner's inquest, may now serve to introduce some remarks on the hygiene of the bath-room, with special reference to its frequent abuse when warm water is the means of ablution. About a fortnight since, a gentleman aged seventy-four years was found sitting dead in a warm bath, which he had entered a short time previously. According to the medical evidence, death was due to syncope, induced, in all probability, by the heat of the room. Here, doubtless, a predisposing cause was also at work—namely, the advanced age of the deceased, which would render him the more susceptible to the always rather depressing influence of warm bathing. Add to these unfavourable, if unavoidable, conditions the presence of a stifling, steam-laden atmosphere, and we need not feel surprised at a statement by the coroner that deaths in similar circumstances are not uncommon. Now that almost every house of moderate rental has its bath-room, the size and ventilation of these apartments are matters of some importance. There is too great a tendency to think that any odd corner may be used for this purpose, that the first and only necessity is to have the required water supply laid on, and that for the short time during which the bath is used the quality of atmosphere is quite a secondary matter. It should not need the teaching of a series of fatal accidents to impress an opposite principle. Clearly, a room which, in course of use, becomes rapidly charged with water vapour should exceed rather than come short of the minimum cubic space (say 800 cubic feet) required for each inmate of a normally-constructed house. With regard to ventilation, ancient prejudices in favour of closed doors and windows and solid walls have to be combated. These have, however, been pretty generally overcome in the case of sitting-rooms and bedrooms, and should not prove insuperable in the case of the bath-room. There is no necessity for the introduction of cold air from without, for a sufficiently pure atmosphere can usually be obtained from the interior of the house, and an outlet-funnel with revolving cowl is all that is required for extraction of the old air and excess of water vapour. Seeing, therefore, that the remedies are apparent, we may hope that in future builders and householders will agree to employ them against the now too evident risks of a warm bath at home.—*Lancet.*

Tea Drinking.—The habit of tea-drinking is becoming more and more thoroughly national in the British Islands as the century draws to a close. Eighty years ago the practice was looked upon as a sign of effeminacy, a well-known patriotic ballad in praise of roast beef lauding the good old days, "ere coffee and tea, and such slip-slops were known." Cobbett, in his "Advice to Young Men," said, "let me beseech you to resolve to free yourselves from the slavery of the tea-and-coffee and other slop-kettle." He thinks that his model young man should devote to the study of arithmetic one-half of the time "usually wasted over tea-

slops." In 1888 tea-drinking is universal. The poor and the rich have long been tea-drinkers; it is amongst the lower middle classes that the habit has recently spread to so marked a degree. Young men beginning life and the great army of elder men, so well known in great cities, whose duties involve much going about from one quarter of the town to another, are steadily recognizing the fact that tea is better than alcohol at lunch. In real society and sham society the "afternoon tea" affords to that beverage the powerful sanction of fashion. The chief evil of tea-drinking amongst the poor is the practice of taking tea whilst it is very hot, so that it acts both directly and indirectly as a cardiac stimulant, causing pleasurable feelings to the drinker, but at the same time irritating the gastric mucous membrane. At the "afternoon tea" of polite society too much is often consumed by the same person, who may pay half-a-dozen visits before the dinner-hour. The evils of tea-drinking have long been recognized, or, at least, we know certain bad results, though it does not follow that others have not been as yet overlooked. The acute objective symptoms of an overdose of tea are relatively trifling compared with opium-poisoning or alcoholic intoxication; yet amongst them is vomiting, and violent sickness under most unfortunate circumstances may be the result of dining or smoking too soon after taking tea. This accident may happen even to a strong-stomached person, at a "high tea," "severe tea," or "tea-dinner," for, as Dr. Lauder Brunton has shown, the tannin of the tea interferes with the digestion of fresh meat, whilst Dr. J. W. Fraser has observed that it does not interfere with the digestion of ham, tongue, and other cured and dried flesh. Hence a slice of tongue is better than a cut off the best joint at a "high tea," as at breakfast. Again, severe and intractable dyspepsia may follow tea-drinking, especially between lunch and dinner. Under these circumstances the tannin and the special alkaloid of tea mix with the half-digested food and gastric juice, the products of this abnormal mixture remaining till food is swallowed at dinner, or, at least, irritating the stomach so as to render it unprepared for the digestion of a good dinner. Several living physicians have shown, on the evidence of experience and of chemistry, that tea cannot be served up free from tannin, even if it be filtered during the process of infusion, like coffee, and poured into a teapot free from leaves. What distant evil effects may be caused by tea-drinking, physicians have not yet determined. Yet we know that it often sets up dyspepsia, which may cause several deadly visceral disorders; it also impedes assimilation and the resistance to cold. More interesting is the question as to whether it may not induce disease of the circulatory organs by affecting the blood-pressure. On the nervous system, both as understood by physiologists and by hypochondriacs, the habit may exercise a very bad influence. A true tea-vice is not unknown; even certain business-men feel, at five o'clock, an irresistible desire to break off important duties in favour of the tea-cup. In hysterical subjects this vice is often a most serious symptom. Though tea too soon before dinner causes dyspepsia, dinner unexpectedly delayed for many hours after a heavy draught of tea, sets up in some persons very severe nervous symptoms, especially marked by tremulousness and an inability to keep the attention fixed on any subject of duty, pleasure, or conversation. In short, the rules of all things in due season, and not too much of anything, apply to tea quite as much as to flesh-diet and to alcohol.—*British Medical Journal*.

Our Bookshelf

"Reading maketh a full man."—Bacon.

INDUSTRY AND HEALTH.

Life and Labour: or, Characteristics of Men of Industry, Culture, and Genius. By SAMUEL SMILES, LL.D. (London: John Murray. 1888.)

THIS is another of those books which have made the name of Dr. Smiles a household word—a book full of sound practical conclusions, enforced by examples drawn from his favourite study of biography. "Life and Labour" is a worthy companion to the "Lives" of George Stephenson and of the Engineers, and to "Self-Help," "Character," "Duty," and "Thrift." Its object is to show the necessity and nobility of work, and its effects on the mental and physical health of man. The author may claim to speak with authority on such subjects since he once practised as surgeon in his native town of Haddington.

He devotes one chapter to the interesting subject of *heredity* in the case of Genius and Talent. He adduces countless instances of the inheritance of physical peculiarities, size, strength, features; of mechanical and artistic skill; of longevity; of disease or defect, as in colour-blindness, asthma, scrofula, or gout, pointing out the hardship of hereditary gout in a poor man. Then he gives numerous examples of the transmission of mental qualities, so that we have lines of hereditary statesmen, warriors, musicians, and scientists. There is a limit to the power of heredity in the case of genius. The "divine spark" is neither inherited nor bequeathed like mere talent. Its influence can be to a great extent counteracted, too, by education, and, Dr. Smiles is careful to add, by the influence of a mother. It has often been noted that great men have had noble mothers, while Byron is an eminent instance of one whose life was deeply influenced by "that rash humour" which his mother gave him. While Dr. Smiles thus lays great stress on lineage, he does full honour to those who, in Junot's phrase, are their own ancestors, who, he avers, have done the great things in the world's history.

One of the most important sections of the work is that on "Over-Brain-Work," which has made so many victims in literature and science. Genius has been defined by Moreau as "a disease of the nerves." Poets and musicians have felt so excited, as to write, "trembling all over;" to find their sight grow dim, or, like Gounod, to have a "mysterious illness" accompany the production of a new work. Such over-stimulation of the brain reacts on the heart, the liver, and the digestive system, the evil effects being intensified by the sedentary habits of most authors and their neglect of exercise. So we find Carlyle's life made miserable by the demon of *dyspepsia*, which seldom left him; and the awful melancholy which so darkened Cowper's life is traced to the same source. *Sleeplessness* is another painful symptom of over-brain-work, and has sometimes led to the ruinous habit of taking opiates to induce sleep. On the other hand, so much does the habit of working grow on one, that some have resorted to the use of tea, coffee, or other stimulants to prevent sleep. It is both painful and surprising to read of a young French physician who, in his devotion to science, drank large quantities of coffee to keep himself awake, and then was forced to take opiates to secure sleep, thus completely ruining his health. Long-continued mental over-work ends in

paralysis or insanity, of which disastrous results Dr. Smiles gives many examples.

Our author adds another protest to the many already made against the growing evil of *over-pressure in schools*. "The proper work of a child," he says, "is to grow;" but the growth of the mind is sought at the expense of that of the body, too often with the result that both are stunted. Examinations have become an end instead of a means of education. The over-pressure, we think, is largely due to competition, the rivalry among teachers for high percentages, payment by results, which means passes, and too often, the desire of parents to have their children *get on* at whatever cost to health. We think too, with Dr. Smiles, that too much instruction is *crammed* into too short a time. Thus it is not unusual to find children of twelve, sometimes even ten, possessed of certificates exempting them from attendance at school, as having passed the examination of the fifth standard, and enabling them to go to work. The mental worry of over-study, and the excitement of examinations, tell very seriously on the health of young men, and far more heavily on that of girls and young women, who become, in the author's words, mere "bundles of nerves."

Mental work is not necessarily opposed to health. Statistics assign the longest lives to philosophers, clergymen, and magistrates; next, to merchants and gardeners; then, by a rather unkind coincidence, to surgeons and butchers. The secret of salutary brain-work is regularity in food, sleep, exercise, and relaxation. The necessity for relaxation is pointed out in the chapter devoted to the *hobbies* by which great workers have relieved the strain on their minds. It is interesting to note that Mr. Gladstone is not the only eminent man who has solaced himself by felling trees. Sir Walter Scott, Pitt, Wilberforce, and Archbishop Whately were all expert woodmen. Of the last Dr. Smiles tells a good story. Two doctors, driving to his house one winter day, when the snow lay two feet thick and the thermometer was little above zero, noticed an old man hewing at a tree, exposed to a pitiless shower of sleet. Said one, "What a cruel master that man must have!" "That labourer," said the other, "whom you think the victim of prelatial despotism is no other than the archbishop curing himself of a headache." Angling, hunting, driving, gardening, walking, and riding, all open-air pursuits, are specially good for maintaining health. Carlyle's best doctor, he used to say, was a horse, while Dickens, Wordsworth, Professor Wilson, and Dr. Arnold were all famed pedestrians. Even change of occupation is a relief, so that some have actually turned to mathematics and sciences as amusement. Literature is a favourite pastime of politicians, as of the late Lords Derby and Beaconsfield, and of Mr. Gladstone. Few, we imagine, would have suspected Richard Cobden of being the author of a play, "The Phrenologist," which no manager would accept. The whole chapter is an answer to the question ascribed to James Watt, "What is man without a hobby?"

Dr. Smiles institutes a comparison of life in *town* with life in the *country*, rather in favour of the latter. The city he describes as the centre of enterprise, intellect, and culture, but not of health and energy. "The manufacturing towns and cities," he says, "are the graves of the physique of our race." He points out the different results of city and country training in youth. "The country boy is allowed to grow up, while the city boy is rushed up." The latter becomes alert and clever in his own line, but apt to know little beyond it; the former is slower, but his powers of observation have been trained

by the sights of nature, and he can do many things for himself which the city boy has done for him. Our author deplores the depression of agriculture which has replaced sturdy ploughmen and waggoners by pale-faced artisans. He considers it proved that stature and strength are degenerating in Britain, and draws a gloomy picture of the straits to which we shall be put if we are ever forced to fight for our food at sea. This leads him into the vexed questions of reciprocal duties and the depopulation of the Highland glens, into which we do not follow him. Unlike the Latin races, who have always loved towns, the Saxon race has ever shown a love for the country. Like the Douglas of old, they "liked better to hear the lark sing than the mouse cheep." So while some prefer the city, like Dr. Johnson, who thought no prospect like London streets, or like Charles Lamb, who said, "I must have a prospect of seeing Fleet Street, or I should mope and pine away," still more can sympathize with the cry of Sir Walter Scott, "If I did not see the heather once a year, I think I should die." Our most eminent men are generally natives either of villages or of small country towns, but as a rule they find themselves drawn into the large cities, where they sit in the law courts, occupy the pulpits, and conduct the newspapers, bringing the health and fragrance of the country with them. Especially is this the case with London, which attracts all talent and genius into its magnetic circle.

We have noticed only those sections of the book which specially appeal to students of the laws of health; but there is not a chapter, and scarcely a page, in the book which is not "full of wise saws and modern instances," from which readers may derive both pleasure and profit.

BURNING GARBAGE.—Sanitarians in this country have for many years been considering the practicability of destroying the garbage of a city by fire. The city of Milwaukee has been a pioneer in the movement to demonstrate the feasibility of this method of disposal. The Commissioner of Health of that city, in a recent letter to the *Sanitary News*, gives some interesting facts concerning the experience of that city. "For more than five months our garbage has been consumed to a dry, inodorous ash. A test of the cost of consuming the garbage was made on Dec. 27, with the following result: The amount received and consumed was 40,215 pounds, and the fuel required was 5,000 pounds, being 4.3 cents per 100 pounds of garbage consumed—a result highly gratifying when we consider that on that date there was a large quantity of snow and ice mixed with the garbage."

LEPROSY IN AMERICA.—The recent cases of leprosy in Philadelphia have been the means of awakening a new interest in that loathsome disease. Dr. Charles W. Allen, in the *New York Medical Journal*, gives a most complete account of the disease, and the views of the best authorities regarding its communicability. His conclusions are as follows: 1. Leprosy has existed to a considerable extent in this country during the past twenty years; 2. The tendency is for the disease to increase, not only from immigration, but also from the occurrence of sporadic cases; 3. It is a contagious disease, and may be transmitted from parent to offspring; 4. Transmission probably takes place, in some instances at least, through inoculation; 5. Segregation has been proved to be the only sure means of freeing a country from its ravages; 6. It is the duty of the Government to establish central leper-hospitals or isolated settlements for the treatment of those afflicted, and for the protection of the community at large.

IMPORTANT ANNOUNCEMENT.

BONUSES TO SUBSCRIBERS TO "HEALTH."

HEALTH, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Book-stalls, on the day of publication. It may also be ordered from the PUBLISHER, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain HEALTH from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we take the opportunity afforded by the COMMENCEMENT of a NEW VOLUME to offer the following FREE GIFTS and BONUSES to all who subscribe to HEALTH for one year or longer:—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of HEALTH, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of HEALTH weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of HEALTH so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of HEALTH, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will also be presented to any one who succeeds in obtaining three yearly subscribers to HEALTH, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with HEALTH should be addressed directly to the PUBLISHER, 2, Paternoster-square, London, E.C., and not to the Editor.

THE constant use of rubber garments and foot-coverings, necessitated by the sloppy weather peculiar to this season, makes it necessary that we should appreciate the dangers to which they may expose us. In being impervious to moisture from without, they are necessarily not pervious to bodily heat and perspiration. These are retained, and the skin is left in a state of special susceptibility, which may become a positive danger when the garments are removed. Colds and serious pulmonary troubles may result from indiscretion in exposure at such times. When coverings of this sort have been worn for any length of time, safety demands that the clothing beneath, moistened by the perspiration, should, so far as possible, be changed and the skin thoroughly dried.

Our Letter-Box

"Conference [maketh] a ready man. —Bacon.

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. Those intended for the Publishing Office to be sent to MR. A. P. WATT, THE PUBLISHER, at the same address.

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," and to no other address.
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

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PULVERMACHER'S World-Famed GALVANIC BELTS for the Cure of NERVOUS EXHAUSTION and DEBILITY, have received testimonials from three Physicians to Her Majesty the Queen, and over Forty Members of the Royal College of Physicians of London.

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QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

CIVILIAN.—You need not be alarmed in any way. You are only over-nervous about yourself. Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), and follow out the rules for diet, &c., given therein. If necessary, write again, but give the advice in the pamphlet a full trial.

G. S. OLWEY.—We certainly think you should continue the treatment for the worms, as it is more than likely you may still be infested with the parasites. Take the medicine as before for the worms; and assure yourself as to the purity of the water you drink. Eat no unwashed or uncooked vegetable food, and take plenty of salt with your diet. Write again if not bettered.

G. GIRLING.—Take a warm bath at bedtime twice a week, to assist your skin-action, and for the itching apply cold water to which a little Hazeline has been added. Take a dose of Mother Siegel's Syrup occasionally as a suitable medicine for you; and regulate your diet, eating little flesh meat, but plenty of vegetables, fish, and milk puddings made with Marshalls' "Farola."

W. HUNTER.—[If you read our rules for correspondents you will see that you cannot receive a reply in these pages in the same week as that in which your letter is received. Each number of a journal takes time to edit, compose, print, and publish.] Read the article in *HEALTH*, No. 199 (post free from the Publisher for 2½d. in stamps) on Acne and Blackheads and how to treat them, and follow out the directions therein given. In addition, take warm baths occasionally, and avoid excess of fatty foods.

A. C. F.—There is not the least indication in your writing that you suffer from "writer's cramp." That is an affection in which the clear writing of your letter is an impossibility. For the symptoms of which you complain we should advise you to try friction of the muscles of the forearm with warm olive oil, twice daily, and massage as well. Read Dr. Murrell's book on "Massage," to be had from H. K. Lewis, Publisher, Gower-street, London, W.C., and note what is therein said regarding massage for muscular weakness. For the rest, attend to your general health, and take, after meals, twice daily, a teaspoonful of Syrup of the Hypophosphites in a wineglass of water. Try a type-writer—one of the Remington class—as an agreeable relief from the pen.

SYDNEY TOMLINSON.—The man you name is a low London quack. If you wish to be robbed of health and money, by all means consult him. See advice given to "Civilian" above. Read the pamphlet there named for an exposure of quacks such as the person you name. If you have seen any of the literature this person distributes by post and otherwise, you could surely be in no doubt as to his character. No respectable person would print and publish such filthy garbage.

ÆRONAUT.—We regret very much having stated the number erroneously. The review appeared in No 57 *HEALTH*.

OMEGA.—1. Yes; the oil may be taken in summer if you feel that it does you good. 2. The iron and oil may be taken together. The two are often combined. 3. No.

CANADA.—Apply to the French Hygienic Society, 56, Conduit-street, Regent-street, W., and take their advice on the matter. It is probable a simple and harmless dye may serve your purpose till the hair recovers its tone. To favour the latter event, use the lotion recommended to "R. S." in *HEALTH*, No. 265.

C. E. C.—What you name in all probability arises from an acid condition of the secretion. Avoid all acid foods, and limit your sugar for a time. Take Vichy Water regularly to counteract the acidity, and a hot bath at bedtime occasionally. Twenty grains bromide of potash in water will also aid you when the pain supervenes. Discontinue all other medicines.

FAITH.—There is a surgical treatise on "Bodily Deformities," by H. A. Reeves, F.R.C.S., published by H. K. Lewis, Gower-street, London, W.C. This book may suit you.

CLAGGAN.—1. Try the hair-wash recommended to "Charles Dean" in *HEALTH*, No. 265. 2. Try Fer Bravais, fifteen or twenty drops thrice daily, after your meals, in water. Give up the port wine, and take Boköl instead to dinner daily. This is a nutritive malt beverage, and is a splendid substitute for stout and like beverages. Apply to Davis, Bergendahl & Co., Quayside, Newcastle-on-Tyne. 3. Give the child a fruit and vegetable dietary—stewed prunes, apples, &c., with Polson's Corn Flour. Half a teaspoonful of Cascara Cordial might occasionally be given in a little water. Try, also, a tepid bath in the morning for the child, and employ massage to the abdomen after the bath, using a little warm oil to anoint the nurse's hands.

WHITE HANDS.—1. It is difficult to suggest anything—as you will have seen from recent newspaper discussions on the matter. If you can send us particulars of your education, &c., and enclose a stamped addressed envelope, we will see what we can do. 2. We should say the state of the hands is an entirely immaterial item. 3. A very unsatisfactory idea. Success in such a vocation is a very

TO THE READERS OF "HEALTH."

THE extraordinary statements of General W. F. Nuthall, Captain J. Paige, Rev. C. G. Squirrel, Rev. James Brierly, M.A., J.P., and other prominent men that have appeared in these columns in the past, have not only attracted much attention, but have awakened doubts in the minds of some as to their genuineness. They were, however, correct in every particular, as the following local statements amply confirm:—

244, Brockley-road, Brockley, S.E., Nov. 25, 1887.—I feel it my duty to write and thank you for the bottle of Warner's SAFE Cure which I was persuaded to try, suffering as I have done for so long a time from indigestion and other complaints caused by a sluggish liver and disease of the kidneys. I had tried nearly all the remedies advertised without any good effect, and I am grateful indeed to my friend who recommended me to try Warner's SAFE Cure, for after taking only one bottle, I can truly say that I was astonished at its quick efficacy: it took away all my pains, and I feel quite another being. I have, and you may depend shall continue, to press all my friends suffering from the liver and complaints of the kidneys to take that medicine. You can make what use you like of this letter, as I am grateful to you for producing such medicine, which gave me the relief I had been seeking without avail for so long a time, and I can only hope that all suffering from the complaints named will be induced to try it.

(Signed) J. PRIOR.

40, Haymerle-road, Peckham, London.—I have long been suffering with gravel, for which I have tried many remedies, but derived no special benefit. I also consulted a noted specialist for the bladder, and resulting in stone in the bladder. Two years ago I was obliged to undergo an operation, and had a very large stone taken from me, which gave me temporary relief; but the gravel kept passing and accumulating as formerly, the pains in the region of the loins and back were frightful, and I wasted away to a mere shadow, having when in health weighed 11 stone. I could not find any permanent relief until I commenced taking "Warner's SAFE Cure," which was recommended to me. Under its use I soon began to pass stones, of which some ten to fifteen large ones have come away, with a large quantity of gravelly sediment. The pains ceased, and I began to gain flesh after the first bottle or two. I consider the change a miraculous one, and my doctor compliments me on the wonderful way I have recovered since taking the "Warner's SAFE Cure." My husband is so pleased with the good the medicine has effected in my case that he is recommending it to everyone he meets.

ROSE PENDALL.

Statements like the foregoing are certainly conclusive evidence of the wonderful merits of this remarkable medicine. No better verification of its purity and power can well be asked. The above testimonials are not from unknown and obscure persons, residing in distant parts of the kingdom, but are the voluntary statements of neighbours and friends living in your own locality, the truth of whose assertions can be easily verified. Are not such proofs sufficient? We can show thousands of similar testimonials from people all over the world. Shake off prejudice! Use the favourite remedy—Warner's SAFE Cure—and enjoy health. For sale by all medicine vendors throughout the world, at 4s. 6d. per bottle, or can be had direct of H. H. WARNER, 86, Clerkenwell Road, London, E.C.

precious thing, and the risks and discomforts are many. [Please note that our office address is 2, Paternoster-square, E.C. Your letter was erroneously addressed.]

TOBY.—We advise you, firstly, to begin tepid bathing each morning (in a sponge bath) and gradually change to a cold bath as the summer advances. This will brace you up, and for a time take a wine-glass of Vin Mariani (Roberts & Co., New Bond-street, London, W., or any good druggist) after your meals, twice daily, as a suitable tonic. We see no reason why you should not take the step you name.

W. HOODMAN.—Glycerine—a teaspoonful either plain or slightly diluted with water, and used in the manner you mention, is a capital remedy, and has the merit of being of simple character. You should adapt your diet according to the rules laid down in advice to "George R." in *HEALTH*, No. 265. A largely vegetable diet would suit you. Try also Dahl's Cakes (advertised in our pages), and take one to breakfast and tea.

G. P. CLARK.—Use Symington's Coffee Essence. The Café au Lait made by this firm is an excellent beverage, easily made. It will probably agree with you when ordinary coffee fails to do so.

META B.—See article in *HEALTH*, 266, on the topic you name.

JOSEPH ADAMS.—The person you name in Aberdeen is a very ordinary and very impudent quack. Do you suppose any respectable medical man would publish such a pamphlet as that you send us?

BULIA.—1. Very nearly 80 per cent. 2. Bayley's Pommade Divine is an excellent application. Try it—17, Cockspur-street, Pall-Mall, S.W. 3. Mellin's Food may be safely given to a child of that age. It is non-farinaceous.

STUDENT.—1. You should alter your diet according to the rules laid down to "Brum" in the present number of *HEALTH*, and you will find your troubles probably cured. 2. The dumb-bells are not too heavy, provided you do not continue the exercise too long. 3. A tepid sponge bath with brisk friction, by aid of one of Wilson's Friction Gloves, thereafter would do you good.

ENGINEER.—1. Due to digestive disturbance. Alter your food habits and avoid alcohol. Take a lighter luncheon or dinner, and try the Cascara Cordial as recommended to "Brum" in the present number. 2. The treatment just ordered will relieve the symptoms named. Be particular to rest after meals. 3. Take more open air exercise by all means, and try a Turkish Bath occasionally. For the rest, trust to alteration in diet and to the use of Cascara Cordial to effect a change in your state. Try a dietary largely of vegetable nature, for a time at least. See hints on this head given to "George R." in *HEALTH* No. 265.

BICEPS.—1. Ten grains of Dover's Powder contain one grain of opium. 2. "Eau de Luce" is used as a stimulant, and is given in water in doses of from ten drops to half a drachm. Externally it is used for insect bites.

B. P. P.—Try the Vin Mariani; a wine-glass after meals thrice daily.

MARK M.—Try wearing one of Dr. Martin's bandages (Messrs. Lindsey & Co., Ludgate-hill, London, E.C.) on the foot, or an elastic stocking. Bathing the foot in hot water, in which Tidman's Sea Salt has been dissolved, will do good when painful.

GEORGE HAY.—Wash the skin regularly with Bayley's Spermaceti Soap and tepid water. If the skin itches, apply a little of the following lotion: Glycerine, an ounce and a half; bicarbonate of soda, one drachm. Mix. Label: "The lotion—to be used as directed."

CIRCUM.—Use "Sanitas" Ointment and "Sanitas" fluid as applications. These are non-poisonous and efficient in every way for the purposes you name.

OLFACTORY.—Wash the parts, night and morning, with Coal Tar Soap and tepid water, and apply to the parts, thereafter, an ointment made of one part iodiform, added to nine parts of benzoated lard.

ELLEN R.—Take twenty grains bromide of potash in a wineglass of water at bedtime, and take a hot bath occasionally before retiring to rest. Take open-air exercise also, and let your food be of a light description.

BALDHEAD.—Try a hair lotion made as follows: Cologne, two ounces; tincture of cantharides, two drachms; oil of rosemary and oil of lavender, of each, ten drops. Another stimulating hair-wash is—glycerine, two ounces; tincture of myrrh, one ounce; eau de Cologne, one ounce; tincture of cantharides, half an ounce; and distilled water, twenty-four ounces.

P. L. O.—Allow a Chlorate of Potash Tablet to dissolve in the mouth occasionally for the cure of the abrasions. We should also recommend a course of the following: Iodide of potash, two drachms; infusion of calumba, six ounces. Mix. A dessertspoonful to be taken thrice daily for a week or so at a time, and repeated after an interval of a fortnight, for a period of say three or four months.

ALICE H.—Try a vegetable dietary—stewed fruits, apples, or oranges, &c., and whole-meal bread, with Grant's Oat Flour for supper and breakfast; avoid tea and coffee, and on each alternate morning take twenty drops Cascara Cordial; sponge with cold or tepid water each morning.

ALEX. PONTON.—The following is a preparation for favouring the growth of the moustache or hair:—Liquor ammonia (strong); chloroform and oil of jasmine, of each, half an ounce; castor oil, half a drachm; spirits of rosemary to make up four ounces. To be kept in a stoppered bottle, and labelled, "A little to be rubbed into the hair in the morning." Use, also, a little of an ointment composed of Lanolin, two drachms; and oil of jasmine, half a drachm. Rub this into the parts at night, so as to prepare them for the lotion in the morning.

C. PARK.—At bedtime inhale the vapour arising from an inhaler into which a pint of boiling water has been put, with a teaspoonful of Friar's Balsam added. After meals, take a dessertspoonful of Scott's Pure Cod Oil Emulsion, thrice daily.

REDHEAD.—Try Bayley's cure for piles (17, Cockspur-street, Pall-Mall, London, S.W.), which in your case is almost certain to effect a cure.

SONDA.—Superfluous hairs can be satisfactorily removed only by electrical means. Read the article on this subject in *HEALTH*, No. 149. We can send, on receipt of stamped addressed envelope, address of a specialist who removes hairs in this way.

GRECIAN.—Read the Ambulance Handbook—"Common Accidents, and How to Treat Them"—by Dr. Andrew Wilson, and others, price 1s. 2d., post free, from Chatto & Windus, 214, Piccadilly, London, W., or order of any bookseller.

A. W. W.—Take the following:—Carbonate of bismuth, ten grains; bicarbonate of soda, five grains. Mix. One such powder to be taken thrice daily, half an hour before meals.

EMINENS.—For blackheads in the skin use Bayley's Soap; press out the filled-up glands, and sponge the parts thereafter with Bayley's Eau de Cologne (17, Cockspur-street, Pall-Mall, S.W.).

BRUM.—Try the effect of taking twenty drops of Cascara Cordial in water an hour before your breakfast, and repeat the dose, if necessary, in the afternoon. This will remove the constipation. As to diet, give up tea and coffee, and for breakfast and supper substitute Scott's Midlothian Oat Flour.

A. ARMOUR.—For boils exercise care in diet (which should be light and non-stimulating); a dose of Lamplough's Pyretic Saline in the morning, when required, as a safe aperient; and lastly, sulphide of lime powders. These latter are to be made up by a druggist as follows:—Sulphide of lime, twenty-four grains; sugar of milk, half an ounce. Mix. Take as much of the powder as will cover a sixpence, every four hours, so long as the boils persist.

T. HALLIDAY.—Give the Dahl's Cakes a fair trial. Compound liquorice powder is a safe aperient; but it might be better to try "Æsculap" water occasionally, if the Dahl's Cakes and a largely vegetable diet do not suffice to cure you.

THE QUEEN'S PRIVATE BAKER at Buckingham Palace, in recommending Borwick's Baking Powder, writes as follows:—"After giving your Baking Powder a fair trial, I beg to inform you that I find it a most excellent and useful invention."

EPERGNE.—You might try taking fifteen drops Fer Bravais before your meals as a suitable tonic, and we advise you also to try milk (as a sheet-anchor of your dietary) peptonized with Fairchild's Powders. This will induce easy digestive action, and aid your cure. For the rest, avoid much meat food, and take Brand's Beef Essence, Soups, and white boiled fish. Eat stale bread only.

A. ROXBURGH.—Write to Messrs. Ward & Co., of Eldon-buildings, Bradford, and state what is needed for the case named.

GLASGOWEGIAN.—Try, first of all, the plan of resting after your meals, and of taking five drops of Pure Terebene on a piece of sugar after your food. If this is not sufficient for your cure, then follow out the diet-hints given to "Alice H." in the present number, and use the Cascara Cordial as there directed.

N. P.—Give the child a little Chemical Food—a teaspoonful in water, after his meals—for a time, and give him plenty of fresh air. A little of Scott's Pure Cod Liver Oil Emulsion with Hypophosphites might also be tried.

MENS SANA.—Dr. Pierre's Eau Dentifrice and his Tooth Powder (advertised in our pages) should be regularly used by you. These preparations prevent decay, and the Eau Dentifrice is an excellent mouth-wash.

DANITA.—Try a pill containing one grain permanganate of potash, to be made up with Kaolin. Take two of these pills, or two dioxide of manganese tablets (Burroughs, Wellcome & Co.'s), twice daily, after your food, before the period, and let us hear the result after a brief trial of this remedy.

SAM B.—Apply to the French Hygienic Society, 56, Conduit-street, London, W., for their advice regarding hair-dyes. For scurf, try the Pommade Trichophile made by the society just named (see advt. in *HEALTH*).

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